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Bisaryldithiophosphonic acids: Synthesis and their reactions with organyl chlorosilanes, germanes, stannanes, and plumbanes

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Abstract

A method of synthesizing arylbisdithiophosphonic acids was developed by the reaction of 2,4-diaryl 1,3,2,4-dithiadiphosphetane-2,4-disulfides with tri(ethylene glycol) and 1,4-butandiol in anhydrous benzene suspension under mild conditions. The arylbisdithiophosphonic acids thus obtained were transformed into the corresponding diammonium salts. New bis(triorganylgermyl), stannyl and plumbyl, and cyclic diphenylsilyl and diphenylplumbyl derivatives of arylbisdithiophosphonic acids were prepared from the reactions of diammonium salts of the corresponding acids with triorganylchlorogermane, chlorostannane, chloroplumbane, diphenyldichlorosilane, and diphenyl dichloroplumbane.

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Keywords

1,3,2,4-dithiadiphosphetane-2,4-disulfides, Bisdithiophosphonic acids, Chlorogermanes, Chloroplumbanes, Chlorosilanes, Chlorostannanes, Glycols